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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,525	07/26/2001	Stepan Sokolov	SUN-P6265-MEG	1168

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EXAMINER

VO, LILIAN

ART UNIT

PAPER NUMBER

2127

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,525

Applicant(s)

SOKOLOV ET AL.

Examiner

Lilian Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 21 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4, 8, 11, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summer, Jr. et al. (US 4,414,624) hereinafter Summer.
4. Regarding **claim 1**, Summer discloses a method to facilitate suspending tasks/threads in a platform-independent virtual machine implemented on an operating system that lacks a global mechanism for suspending tasks/threads, comprising:
 - executing a task/thread requiring other tasks/threads to be suspended (col. 15, lines 3 – 22);
 - changing a scheduling policy for the task/thread (col. 15, lines 12 – 19); and
 - raising a priority of the task/thread to a highest available priority, whereby changing the scheduling policy and raising the priority of the task/thread causes the thread to run to completion while other tasks/threads do not run (col. 15, lines 3 – 22).

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Summer however did not use the term threads. Instead, he uses the term tasks, which is partitioned from the whole program (col. 4, lines 9 – 11 and fig. 1). It would have been obvious for one of an ordinary skill in the art, at the time the invention was made, to relate the concept of a task with the concept of a thread, since the task as referred to in Summer is also a part of the program that can be executed independently of the other parts like a thread.

5. Regarding **claim 4**, Summer discloses the changing the scheduling policy for the thread includes changing the scheduling policy from round-robin to first-in, first-out (col. 14, lines 32 – 36, col. 15, lines 17 – 20).

6. **Claims 8, 11, 15 and 18** are rejected on the same ground as stated in claims 1 and 4 above.

7. Claims 2, 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summer, Jr. et al. (US 4,414,624, hereinafter Summer) in view of Cutler et al. (US 5,752,031, hereinafter Cutler).

8. Regarding **claim 2**, Summer did not clearly disclose the additional limitation as claimed. Nevertheless, Cutler discloses the step of upon completion of the thread, reducing the priority of the thread to an assigned priority and returning the scheduling policy of the thread to an assigned scheduling policy (col. 9, lines 29 – 44: each thread also has a dynamic priority). It would have been obvious for an ordinary skill in the art, at the time the invention was made to incorporate

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Cutler's teaching with Summer so that a thread priority can be dynamically changed as necessary depending on the type of the work the thread is performing.

9. **Claims 9 and 16** are rejected on the same ground as stated in claim 2 above.

10. Claims 3, 5 – 7, 10, 12 – 14, 17 and 19 - 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summer, Jr. et al. (US 4,414,624, hereinafter Summer) in view of Applicants' admitted prior art (hereinafter AAPA).

11. Regarding **claim 3**, Summer discloses the thread requiring other threads to be suspended (col. 15, lines 3 – 11). Summer however did not disclose the suspended threads include a garbage collection thread. Nevertheless, AAPA discloses that while the other threads are halted, the garbage collection or other uninterruptible task runs to completion (specification page 2, paragraph 5). It would have been obvious for one of an ordinary skill in the art to recognize that if the other uninterruptible task that runs to completion, than the collection garbage thread could be included as one of the other threads that were suspended. It would have been obvious for one of an ordinary skill in the art, at the time the invention was made, to incorporate AAPA concept with Summer so that any threads/tasks can be executed until completion as required or be suspended when necessary.

12. Regarding **claim 5**, Summer did not disclose the additional limitation as claimed. Nevertheless, AAPA discloses the operating system that lacks the global mechanism for

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suspending threads includes POSIX (specification page 2, paragraphs 3 and 5). It would have been obvious for an ordinary skill in the art, at the time the invention was made, to incorporate Agape's teaching with Summer because Summer is implemented with virtual machines (fig. 2) while operating systems with POSIX thread also include the same basics services to those platform-independent machines.

13. Regarding **claim 6**, Summer did not disclose the platform-independent virtual machine includes a JAVA VIRTUAL MACHINE. Nevertheless, AAPA discloses the Java Virtual machine, as a well know feature in the art (specification page 1, paragraph 2 and page 2, paragraph 3). It would have been obvious by one of an ordinary skill in the art, at the time the invention was made, to implement Summer's system with Java virtual machine to able to execute Java application program.

14. Regarding **claim 7**, Summer did not disclose the step of performing a garbage collection with the thread. Nevertheless, AAPA disclose that while other threads are halted, the garbage collection task runs to completion (specification page 2, paragraphs 4 – 5). It would have been obvious for an ordinary skill in the art, at the time the invention was made, to incorporate this feature into Summer's system so that garbage collection task can be performed for maximizing resource utilization.

15. **Claims 10, 12 – 14, 17 and 19 – 21** are rejected on the same ground as stated in claims 3 and 5 – 7 above.

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Conclusion


16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 571-272-3774. The examiner can normally be reached on Monday - Thursday, 7:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lilian Vo
Examiner
Art Unit 2127

lv
September 26, 2004


MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
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